WHAT IS CLAIMED IS:

1. A method for producing a polybutylene terephthalate film by an air-cooled inflation method that inflates a tube of a molten polybutylene terephthalate resin extruded from an annular die by the injection of air, wherein a resin-extruding temperature is the melting point of said polybutylene terephthalate resin - 15°C to said melting point - 5°C; and wherein a resin-extruding pressure is 8.3 to 13.7 MPa.

2. The method for producing a polybutylene terephthalate film according to claim 1, wherein said polybutylene terephthalate resin has an intrinsic viscosity of 0.8 to 1.5.

3. The method for producing a polybutylene terephthalate film according to claim 1 or 2, wherein said annular die has a lip gap of 0.8 to 1.2 mm and a diameter of 120 to 250 mm; and wherein a blow-up ratio is 2.0 to 4.0.

4. The method for producing a polybutylene terephthalate film according to any one of claims 1 to 3, comprising the steps of (1) ejecting a warm air from a first hot-air-blowing means disposed near said annular die, to slowly cool a neck portion of said bubble to a temperature ranging from said melting point - 40°C to said melting point - 25°C; (2) ejecting a warm air from a second hot-air-blowing means disposed above said first hot-air-blowing means, to slowly cool an inflating portion of said bubble to a temperature ranging from said melting point - 70°C to said melting point - 40°C; (3) ejecting a warm air from a third hot-air-blowing means disposed above said second hot-air-blowing means, to slowly cool a frost line region of said bubble to a temperature ranging from said melting point - 130°C to said melting point - 90°C; and (4) isolating said bubble region from an ambient atmosphere, and causing the warm air ejected from said first to third hot-air-blowing means to flow upward along an outer surface

of said bubble region, by a partition disposed with a gap around a bubble region above said frost line.

5. The method for producing a polybutylene terephthalate film according to claim 4, wherein said partition is provided with pluralities of warm air exits, and a rectifying plate is disposed inside said partition, so that the warm air ejected from said first to third hot-air-blowing means is rectified.

6. The method for producing a polybutylene terephthalate film according to claim 4 or 5, wherein the inflating portion of said bubble is slowly cooled by the warm air ejected from said second hot-air-blowing means while keeping an amorphous state.

7. The method for producing a polybutylene terephthalate film according to any one of claims 4 to 6, wherein said partition comprises a heating means, to keep said bubble region at a temperature ranging from the glass transition temperature Tg of said polybutylene terephthalate resin to Tg + 65°C.

8. The method for producing a polybutylene terephthalate film according to any one of claims 4 to 7, wherein said bubble region is surrounded by a cylindrical net to prevent the lateral vibration of said bubble.

9. The method for producing a polybutylene terephthalate film according to any one of claims 4 to 8, wherein the temperature of the warm air ejected from said first and second hot-air-blowing means is 25 to 50°C, and the temperature of the warm air ejected from said third hot-air-blowing means is the glass transition temperature Tg of said polybutylene terephthalate resin to Tg + 65°C.

10. The method for producing a polybutylene terephthalate film according to any one of claims 1 to 9, wherein the air-cooled inflation film

is further subjected to a monoaxial or biaxial cold orientation.

11. The method for producing a polybutylene terephthalate film according to claim 10, wherein said cold orientation is conducted at a temperature ranging from the glass transition temperature Tg of said polybutylene terephthalate resin to Tg + 60°C.

12. The method for producing a polybutylene terephthalate film according to claim 10 or 11, wherein the formation of the tubular film by an air-cooled inflation method and said monoaxial or biaxial cold orientation are continuously conducted.

13. The method for producing a polybutylene terephthalate film according to any one of claims 10 to 12, wherein the tubular film is subjected to a monoaxial or biaxial cold orientation after being bisected.

14. The method for producing a polybutylene terephthalate film according to any one of claims 10 to 13, wherein the formation of the tubular film by an air-cooled inflation method, the bisection of said tubular film and said monoaxial or biaxial cold orientation are continuously conducted.

15. A polybutylene terephthalate film obtained by the production method recited in any one of claims 1 to 9, which has a crystallinity of 35 to 40%, and a thermal shrinkage ratio of 0.4% or less in a longitudinal direction and in a transverse direction.

16. An apparatus comprising (a) an annular die for extruding a molten polybutylene terephthalate resin in a tubular shape; (b) a means for injecting air into the resultant polybutylene terephthalate tube to form a bubble; (c) a first hot-air-blowing means disposed near said annular die for slowly cooling a neck portion of said bubble; (d) a second hot-air-blowing means disposed above said first hot-air-blowing means for slowly cooling an inflating portion of said bubble; (e) a third hot-air-blowing means

disposed above said second hot-air-blowing means for slowly cooling a frost line region of said bubble; and (f) a partition disposed above said third hot-air-blowing means and around a bubble region above said frost line for isolating said bubble region from an ambient atmosphere, and for causing the warm air ejected from said first to third hot-air-blowing means to flow upward along an outer surface of said bubble region, said partition having pluralities of warm air exits.

17. The apparatus for producing a polybutylene terephthalate film according to claim 16, wherein a rectifying plate is disposed inside said partition.

18. The apparatus for producing a polybutylene terephthalate film according to claim 16 or 17, wherein a heating means is disposed inside said partition.

19. The apparatus for producing a polybutylene terephthalate film according to any one of claims 16 to 18, wherein a cylindrical net surrounding said bubble region is disposed inside said partition to prevent the lateral vibration of said bubble.

20. The apparatus for producing a polybutylene terephthalate film according to any one of claims 16 to 19, wherein an inflating portion of said bubble in an amorphous state is slowly cooled by the warm air ejected from said second hot-air-blowing means.

21. The apparatus for producing a polybutylene terephthalate film according to any one of claims 16 to 20, further comprising a means for cold-orienting the resultant air-cooled inflation film.

22. The apparatus for producing a polybutylene terephthalate film according to claim 21, wherein an air-cooled inflation means comprising said annular die, said air-injecting means, said first hot-air-blowing means, said second hot-air-blowing means, said third hot-air-blowing means and

said partition, and said cold orientation means are disposed along the flow of said film continuously.

23. The apparatus for producing a polybutylene terephthalate film according to claim 22, which comprises nip rolls for taking off the tubular film formed by said air-cooled inflation means, and further (1) an edge position control unit for keeping the edge positions of said tubular film flattened by said nip rolls from changing, and (2) a cutting means for bisecting said tubular film with its edge positions kept unchanged, between said air-cooled inflation means and said cold orientation means.

24. A shape-memory polybutylene terephthalate laminate film comprising the polybutylene terephthalate film obtained by the production method recited in any one of claims 1 to 9, and another film or film laminate, which comprises at least one selected from the group consisting of a paper sheet, another resin film and a metal foil, said laminate film being provided with the memory of a first shape given in a predetermined temperature range.

25. The shape-memory polybutylene terephthalate laminate film according to claim 24, which undergoes deformation to a second shape in a temperature range different from said predetermined temperature range.

26. The shape-memory polybutylene terephthalate laminate film according to claim 25, which substantially returns from said second shape to said first shape when exposed to a temperature equal to or higher than the temperature at which said first shape is memorized.

27. The shape-memory polybutylene terephthalate laminate film according to claim 26, wherein the temperature for returning to said first shape is the glass transition temperature of said polybutylene terephthalate or lower.

28. The shape-memory polybutylene terephthalate laminate film

according to claim 27, wherein the temperature for returning to said first shape is 15 to 25°C.

29. The shape-memory polybutylene terephthalate laminate film according to claim 26, wherein the temperature for returning to said first shape is higher than the glass transition temperature of said polybutylene terephthalate and lower than the melting point of said polybutylene terephthalate.

30. The shape-memory polybutylene terephthalate laminate film according to claim 29, wherein the temperature for returning to said first shape is 75 to 100°C.

31. The shape-memory polybutylene terephthalate laminate film according to any one of claims 25 to 30, wherein said first shape is a curled shape, and said second shape is substantially a flat shape or an oppositely curled shape.

32. The shape-memory polybutylene terephthalate laminate film according to any one of claims 24 to 31, wherein at least one entire surface of said polybutylene terephthalate film is provided with a lot of substantially parallel linear scratches, so that said laminate film can be torn substantially straight along said linear scratches from any position.

33. The shape-memory polybutylene terephthalate laminate film according to claim 32, wherein the depth of said linear scratches is 1 to 40% of the thickness of said polybutylene terephthalate film.

34. The shape-memory polybutylene terephthalate laminate film according to claim 32 or 33, wherein the depth of said linear scratches is 0.1 to 10 μm, the width of said linear scratches is 0.1 to 10 μm, and intervals between said linear scratches are 10 to 200 μm.

35. The shape-memory polybutylene terephthalate laminate film according to any one of claims 32 to 34, wherein at least one surface of

said polybutylene terephthalate film is vapor-deposited with a ceramic or a metal.

36. The shape-memory polybutylene terephthalate laminate film according to any one of claims 24 to 35, which has a layer structure comprising said polybutylene terephthalate film, said paper sheet and a sealant film in this order.

37. The shape-memory polybutylene terephthalate laminate film according to any one of claims 24 to 35, which has a layer structure comprising said polybutylene terephthalate film, said paper sheet, a rigid film and a sealant film in this order.

38. The shape-memory polybutylene terephthalate laminate film according to any one of claims 24 to 35, which has a layer structure comprising said polybutylene terephthalate film, a rigid film and a sealant film in this order.

39. The shape-memory polybutylene terephthalate laminate film according to any one of claims 26 to 38, which has a light-screening ink layer on a surface of said polybutylene terephthalate film on the side of said paper sheet, or on a surface of said rigid film on the side of said sealant film.

40. A wrapping sheet formed by the shape-memory polybutylene terephthalate laminate film recited in any one of claims 24 to 39.

41. A container lid formed by the shape-memory polybutylene terephthalate laminate film recited in any one of claims 24 to 39.